



Yellowstone Airport Fire School.

Vol. 24 — No. 5

YELLOWSTONE AIRPORT FIRE SCHOOL

By JERRY BURROWS
Supervisor Security & Operations

A one-day crash fire rescue training course was conducted on the Yellowstone Airport July 23, 1973 by Mike Sederholm, Airport Crash Fire Rescue Chief. Ted Mathis, Airport Manager, and Jerry Burrows, Division of Aeronautics, assisted with the presentation. The school was attended by 23 firefighters.

Training included: Proper approach to burning aircraft; application of extinguishing agents; rescue techniques; tour through a Convair 580 pointing out emergency exits and their use; rescue equipment and its use; the operation of the fire truck.

Each of the men were given an opportunity to wear aluminized, asbestos protective clothing and to extinguish live fires with protein foam.

Five West Yellowstone Fire Department members, under the direction of Chief Lon Hadley, backed up the State truck with one of the city's trucks. In addition, they had an opportunity to train with their foam proportion equipment in the extinguishment of a few fires.

The Division of Aeronautics appreciates the fine turnout by the city

and their assistance during the school. We look forward to continued cooperation between the city and the airport.

The weather cooled enough to allow 11 smoke jumpers from the In-



Mike Sederholm (right) explaining rescue equipment on fire truck.

teragency Fire Control Center to be in town and attend the course. Others attending were from Interwest Aviation—the fixed based operator, the city police department and other airport employees.



One of ten 150-pound dry chemical fire extinguishers obtained by the Division of Aeronautics.



Fire fighters dumping foam concentrate into fire truck.

**MONTANA
and the
SKY**

DIVISION

OF

AERONAUTICS

July-August, 1973

DEPARTMENT OF
INTERGOVERNMENTAL
RELATIONS

Thomas L. Judge, Governor
Frank McChesney, Director
Martin T. Mangan, Deputy Director
Official Monthly Publication
City/County Airport
of the

DIVISION OF AERONAUTICS

Phone 449-2506

Box 1698

Helena, Montana 59601

William E. Hunt, Administrator

Worthie M. Rauscher,
Deputy Administrator

Board of Aeronautics

Richard O'Brien, Chairman
Thomas F. Kiely, Vice-Chairman
Michael D. Ferguson, Secretary

Tom Burris, Member

William A. Merrick, Member

Leo Collar, Member

Bruce Vanica, Member



MONTANA AND THE SKY is published monthly in the interest of aviation in the State of Montana.

Second-Class postage paid at

Helena, Montana 59601

Subscription \$5.50 per year.

Edited by: R. Bowsher



FEDERAL AVIATION
ADMINISTRATION
ITINERARY LISTINGS

Airport	Sept.
Bozeman	
Butte	
Culbertson	
Glasgow	5
Glendive	20
Great Falls	12
Hayre	
Kalispell	26
Lewistown	
Miles City	20
Missoula	19
Sidney	

NOTE: Provisions have been made to give private, commercial and flight examinations **ON AN APPOINTMENT BASIS ONLY** at the following FAA Flight Service Stations.

Bozeman	Livingston
Butte	Lewistown
Cut Bank	Miles City
Great Falls	Missoula

The three airports in San Francisco Bay area pour over \$1 billion each year into the area's economy, according to a recently released report.

*Administrator's
Column*



will be most welcome.

* * * *

I would like to take this opportunity to thank Northwest Airlines and Frontier Airlines for their prompt and cheerful assistance in recovering my luggage that I left in Dallas. I arrived in Dallas on a separate flight on a different airline and then thought that my bag had been forwarded to my destination. It had not and I had to notify Northwest in Helena of what had happened and they contacted Frontier and Braniff and my luggage was forwarded to Helena. My record of having traveled on airplanes without ever having them lose the luggage is intact. Again, I appreciate their prompt assistance in recovering the luggage that I managed to lose.

* * * *

Since glider activity is on the increase in Montana, I thought you might be interested in knowing of a Canadian law case in which the court held that between a helicopter and a glider involved in a mid-air collision the court found that the glider pilot was primarily negligent in failing to take the necessary action to avoid the collision and the helicopter pilot was contributorily negligent in failing to give the right-of-way to the glider. A reading of the case indicates that the glider pilot had the primary duty to avoid the collision when he should have done so, and the helicopter pilot was held negligent because he failed to allow himself enough room away from a mountain to make a right turn. The attorneys for the parties to the suit argued that they should apply the rules of law that apply to either automobile accidents or to ships at sea, but the British Columbia Supreme Court held that the air regulations would apply, particularly those relating to safety, and that the automobile and Admiralty laws do not necessarily have any application.

More than 42,000 operations were handled during the 1971 Experimental Aircraft Association's Fly-In by the FAA controllers at Oshkosh.

CAP MONTANA WING CONFERENCE HELD JULY 14

By WO RUTH SIMMERLY
Administrative Officer
Montana Wing, CAP

Approximately fifty members of the Montana Wing, Civil Air Patrol, its Rocky Mountain Region office in Denver, and local squadrons from throughout Montana attended the Montana Wing Conference held Saturday, July 14, at the Colonial Hilton in Helena.

Lieutenant Colonel George W. Bonnes, Montana Wing Commander, said that the Rocky Mountain Region and Montana Wing staff conducted several workshops for Civil Air Patrol cadets and senior members in such areas as cadet activities, personnel, safety, aerospace education and finance.

A banquet was held that evening at which Mr. William E. Hunt, Administrator of Montana Division of Aeronautics, was featured speaker. The Air Force Commendation Medal was awarded to Technical Sergeant Kenneth Veal, staff member of the Montana Wing Liaison Office. Lt. Col. Bonnes presented Civil Air Patrol Certificates of Appreciation to Ron Richards, Major General John Womack, Bill Hunt, Larry Kicheloe, Pete Morrow and Ann Wostel in recognition of their contributions to Civil Air Patrol activities.



Left to right: Jeff Bloomstrom, Tim McDonnell.



Left to right: Marylou Marshall, Joanne Braeda, Phil Guan.



Left to right: Judy Bayer, Terry Nilson, Doug Sire, Kathy Hart, Mary King.



Left to right: Bill Hunt, Ann Wostel, James Modisette, George Bonnes.



Left to right: Gilbert Garrett, Dick Harwood, James Modisette, Kenneth Veal.



Receiving line.



Left to right: Ann Wostel, James Modisette, Bill Hunt, Mrs. Kenneth Martin, George Bonnes, Ron Richards, Dick Harwood.

AVIATION EDUCATION HIGHLIGHTS



By MICHAEL A. SCHUKERT
Aviation and Space Education Chief

While awaiting additional input from members of the twelve or more aviation/aerospace-oriented organizations discussed in the last issue of *Montana and the Sky*, this and subsequent articles will be devoted to a description of the various aviation and space education programs sponsored and/or supported by the Division of Aeronautics.

With one glowing exception, most of the state's youngsters make their first acquaintance with formal aerospace studies as secondary school students. The exception is the outstanding aerospace learning and activity program made available to Montana's 13-21 year-old population who are cadet members of Civil Air Patrol (CAP), the official auxiliary of the US Air Force.

The professionally prepared and regionally accredited CAP aerospace education package is an integral part of the CAP Cadet Program and is available to almost any junior or senior high school student who: (1) is fortunate enough to live in a community with an active CAP cadet or composite squadron; (2) is willing to devote the requisite time and effort to learn more about today's aerospace vehicles and activities; and, (3) has the strength of character necessary to function in a quasi-military organization which emphasizes leadership training, physical fitness and moral development.

CAP's Cadet Program isn't every youngster's cup of tea of course since certain concessions must be made to discipline and regimentation (a pilot's fare); however, the rewards accruing to conscientious cadets far out-weigh

the demands, e.g., solo license flight training opportunities, "headstart" provisions for those intending to take Air Force ROTC in college, entry into enlisted service in the Air Force at one pay grade higher than other basic trainees, and special application channels for Air Force Academy Preparatory School aspirants.

Unfortunately, a scarcity of self-giving adult volunteers needed to serve as local unit leaders has severely limited Montana's CAP Cadet Program possibilities. At the present time, there are only nine cadet program-hosting units in the State. If you, the reader, have an aeronautical and/or military background which you would like to share with Montana's aviation inspired youth, please let me know and I'll personally see to it that you receive CAP membership information and application materials — promptly (CAP's cadet and adult membership needs your help!).

Presently, eight Montana high schools offer independently-developed aviation/aerospace elective courses, and although this number is not all that impressive, we rank about 20th in the nation in this respect.

Since this is where it all begins for so many teen-agers, the following aviation education program description and commentary series will deal with a treatment of the state's high school-level activities. The following information was extracted from a survey which I conducted during the recently-completed school year. A limited number of copies of the survey are available to those interested in a more thorough breakdown of facts and specifics which, because of space limitations, could not be provided here.

Montana high schools offering aviation/aerospace courses for elective credit include: Billings West; Broadwater County, Townsend; C. M. Russell, Great Falls; and Red Lodge.

Although subject matter content is basically similar from program to program, diversity first became apparent in the selection of a name

for the course. The most popular title is "Aviation Science" with four schools so labeling their offering. Other titles include: Aerospace, Aerospace Education, Aeronautics, Aerospace Science, Aviation Ground School, and Introduction to Aeronautics.

A question commonly asked by secondary educators when approached concerning the possibility of starting an aviation-aerospace program at their school is, "Where shall we put it?" This is a very legitimate question since "it" ought to be an accredited course and, therefore, should be categorized separately or be relegated to one of the school's academic or vocational departments for administrative purposes. Five of our high schools have circumvented this sometimes sticky matter by classifying their aerospace offering as a separate curricular entity while three schools deemed the course's subject matter better suited for treatment as a physical science elective. As might be expected, the final decision regarding course placement is often influenced

by the academic or occupational background of the person ramrodding the course into the school's curriculum although this is by no means a hard and fast rule—the aerospace program at Red Lodge is entrusted to an aviation oriented music teacher!

Another variable is course length. At the present time, half of the high schools prefer to offer it as a one-semester elective while the others consider the content sufficient to warrant treatment as a two-semester, or full year offering. Accreditation in the above cases is usually one-half and one credit respectively.

Text books utilized in the program illustrate yet another point of variance. Presently, the most popular text is C. N. VanDeventer's "An Introduction to General Aeronautics" published by the American Technical Society and copyrighted in 1965. Other texts used in the course include: the FAA's "Private Pilot Handbook of Aeronautical Knowledge"; the University of Illinois Press' "Fund-

amentals of Aviation and Space Technology"; and Sanderson's "Fundamentals of Aeronautics."

Supplemental course materials generally include audi-visual training aids, free loan films (available from the Air Force, State Office of Public Instruction, NASA, FAA and the Division of Aeronautics), and various flight planning items such as inexpensive computers, plotters, and out-dated sectional and WAC navigation charts.

"Hands on" experiences, where financially feasible, usually consist of minute to one hour orientation flights. Depending on local resources, 1-3 hour cross-country navigation flights are sometimes provided. In all instances the schools are encouraged to coordinate their flying activities with their local airport operator rather than depend upon the Division of Aeronautics to provide aircraft and pilots. FBO's reading this article are asked to keep this fact in mind and, whenever possible, to give the schools a financial break if they should approach you with piloting and aircraft rental cost inquiries.

In contrast to the majority of a high school's offerings, aviation/aerospace courses provide the state's youngsters with several significant carry-over benefits among which are: An initiation into an adult activity with many vocational and recreational possibilities; A definite sense of accomplishment if successful in completing the FAA Private Pilot Written Examination as an end-of-course activity (required by two

schools and optional in three others) and of signal importance to members of the educational community, an insight into, and an appreciation of, the importance and inter-relationship of the traditional academic disciplines in the development of aeronautical competence.

I would venture a guess that the average high school aviation student who has mastered the wind triangle concept will have a better intuitive grasp of basic trigonometry than many higher mathematics students with a gift for rote learning and a

penchant for formulas. Similarly, I am far more impressed (and encouraged) by the "C" student who has solved a time-speed-distance problem on his issued E-6B computer than by the straight "A" honor student who can boggle your kin with the adept manipulation of his \$25 slide rule.

Without impugning the accomplishments of our brighter college degree-aspiring high schoolers (we will always need them!), I believe that we must be realistic and admit that the typical high school student is more interested in airplanes, cars, motorcycles, hunting, fishing, skiing, and girls—not necessarily in that order—than in biology, english, math, chemistry and social studies. The question is, how can we engage a youth's energy and enthusiasm in a school-sponsored program and still expect him to come away from the experience with usable academic skills and an appreciation of the need for life-long education?

Eight Montana high schools think they have an answer to the above question and they are doing a pretty darn good job (ask their students) of proving themselves correct.

Those of you living in communities with aviation-aerospace course-offering high schools are indeed fortunate. Some of your home town boys and girls might be studying to become aeronautical engineers, applying for the Air Force Academy, planning a career with the airlines, or simply assuring themselves of a secure future as aircraft mechanics, air traffic controllers, or FBO's as a result of a simple one-semester course that "turned them on" in high school. What a pity more of Montana's schools have yet to see the light.

You are a member of your school board or PTA you say? Why not get cracking and talk up aviation-aerospace education in your high school? One thing is for certain, you have both the precedent and the statistics to prove that it is not a bad idea.

My next article will focus on Montana's two aviation programs—offering vocational-technical centers:

Helena Vo-Tech, and Missoula Technical Center. There are some interesting and exciting things going on at these two post-secondary institutions which I am sure you will want to know about.

CONGRATULATIONS



FAA CERTIFICATES ISSUED RECENTLY TO MONTANA PILOTS

PRIVATE

Theron M. Hanson—Billings

Donald D. Morissette—Hardin

Murry K. Malsbury—Billings

John A. Knopp—Sidney (MEL)

Michael J. Barovich—Billings
(Instrument)

Eugene Stacey—Buchanan, Sask.

David L. Burkey—Billings

Donald H. Hockenbury—Sioux City,
Iowa

William H. Balhiser—Billings

Trent N. Toms—Billings

Walter E. Malone—Miles City

Robert E. Roe—Midland, Mich. (MEL)

Ray R. Heilman—Billings

Robert B. Dooen—Billings
(Instrument)

Robert A. Gilchrist—Maple Creek,
Sask.

William D. Schaak—Billings (MEL)

Robert D. Schaak—Billings (MEL)

James A. Cox—Cody, Wyoming

Harold W. Estey—Saskatoon, Sask.

Walter R. Warthen—Missoula

James R. Coil, Jr.—Seeley Lake

Lenore J. Brabham—Philipsburg

Ted A. Morris—Punta Gorda, Florida

Gerald P. Foley—Kalispell

Timothy C. Sutter—Hungry Horse

Anthony P. Ricci—Missoula

Victor A. Lupak—Alberta

Peter D. Mansell—Edmonton, Alberta

Charles R. Blend—Matteson, Ill.

Craig E. Johnson—Great Falls

(Instrument)

Douglas N. Spottswood—Helena

Barry L. Adkins—Kalispell

(Continued on Page 6)

(Continued from Page 5)

Earl E. Andrus, Jr.—Missoula (MEL)
Sandra Ann Salway—Whitefish
William F. Abel—Lewistown
Daryl V. Cooper—Ronan
James J. Jewart—Lewistown
Donald Raymond Marbel—Chester
Marc S. Flaherty—Missoula
Garry A. Lindsey—Libby
Michael E. Walsh—Cameron
Raymond L. Tracy—Bozeman
Paul J. Kober—Columbus
Gary J. Bergman—Sweetgrass
Michael P. McConkey—Missoula
Jack B. Mercer—Lolo
Rodney E. Nelson—Missoula
Edward C. Martin—Kalispell
Jay W. Preston—Ronan
Richard C. Thomason—Kalispell
Richard L. Riggelman—Missoula
David C. MacFadden—Great Falls
Charles F. Remington—Raynesford
James H. Barfknecht—Helena
Michael H. Ivers—Libby
Glen R. Smith—Missoula
John P. Frerich—Whitefish
Timothy C. Swallen—New Canaan, Conn.
Faust M. Alvarez—Helena
Dean Howard Johnson—Missoula
Edgar A. Lanoue
Rodney V. Lenz—Missoula
Roger L. Hyde—Bozeman
Michael M. Anderson—Bozeman
Richard C. Pancake—Malta
Henry F. Shovic—Great Falls
Edward C. Milnar—Joplin
Michael J. Mariani—Havre
James F. Cooper—Lolo
Ronald D. Keeney—Missoula
Kenton H. Oma—Polson
Jim N. Crawford—Livingston
George H. Pearson—Fairfield

COMMERCIAL

Roger L. Williams—Lambert
Allen P. Hartman—Billings
Charles P. Monaghan—Terry
Burton Chandler, Jr.—Billings (Instrument)
Patrick D. Whelan—Two Dot
Donald J. Woodward—Lewistown (Instrument)
Dennis R. Skovgaard—Billings (MEL)
Donald G. Oberquell—Billings (Instrument)
Steven C. Sande—Billings
James R. Harbaugh—Miles City

Lowell O. Koppang—Williston, N. D. (MEL)
Adolph D. Schaak—Billings (MEL)
Darryl J. Doan—Billings
Donald C. Thelen—Helena
David S. Green—Great Falls (MEL)
Georgianna M. Ross—Kalispell (Instrument)
Mark S. LaVoie—Missoula (MEL)
James L. Thomas—Missoula (Instrument)
William L. Stewart—Dillon (MEL)
Duane A. Strouf—Hobson (Instrument)
Vance L. Vickers—Lolo
John D. Opalka—Missoula (Instrument)
Bryce K. Campbell—Malta
Dennis C. Shallenberg—Missoula (Instrument)
James R. Lott—Missoula (MEL)
Albert V. Bamber—Edmonton, Alberta (MEL)
Timothy J. Dwyer—Great Falls
Gary J. Cusick—Kalispell (MEL)
John W. Wayne—Gildford
Robert H. Madison—Great Falls (Instrument)
Gene C. Miller—Odessa, Texas (MEL)
Don W. Hoover—Mayfield, Ky. (MEL)
Ronald L. Meeks—Stevensville
Arthur B. Emery—Philipsburg
Jack C. Smallwood—Helena (Instrument)
Mark A. Larson—Missoula (MEL)
Aylmer A. Blakely—Missoula
David M. Nathe—Kalispell
Robert Delk—Kalispell
Kevin O. Daniels—Missoula
Michael R. Perrine—Columbia Falls (MEL)
Craig C. Young—Missoula (MEL)
James F. O'Donnell—Voorheesville, New York
Craig E. Johnson—Ingleside, Ill. (Instrument)
Harold V. Manicke—Missoula
Quentin L. Hays, Jr.—Great Falls (MEL, Instrument)
Walter K. Tabor—Kalispell

GROUND INSTRUCTOR

Dennis R. Skovgaard—Billings
Gary L. Herem—Red Lodge
Kevin Odean Daniels—Missoula (Advanced)
Bryce C. Campbell—Malta (Advanced)

Jack C. Smallwood—Helena
Michael E. Walsh—Cameron
Charles B. Koehler—Santa Fe, New Mexico (Advanced & Instrument)

FLIGHT INSTRUCTOR

Jay T. Nance—Birney
James M. Wysel—Lewistown
Julianne Peden—Billings
Robert A. Palmersheim—Fromberg
Fred K. Kimp—Livingston
Rolan T. Albright—Roundup
James R. Heppner—Lewistown
Gregory B. Mecklenburg—Bozeman (Glider)
Donald R. Wilson—Sand Springs
Bron T. Herrod—Billings
Kenneth L. Strand—Great Falls
Dennis C. Shallenberg—Missoula (Glider)
David Gregory Healow—Billings (Glider)
John F. Patten—Helena
Kevin O. Daniels—Missoula
Robert A. Brown—Circle
Donald H. Newton—Lewistown
Forrest Lawn Gue—Missoula (Rotorcraft)
John E. Fenske—Kalispell

AIRLINE TRANSPORT PILOT

Phillip D. Huebner—North Glenn, Colo.
Bron T. Herrod—Billings
Woodrow M. Hassinger—Park City, Utah
Melvin P. Guerrera—Missoula

AIRFRAME MECHANIC

Gary E. Waters—Helena
Leonard H. Patton—Helena
William A. Brown—Bozeman
James G. Hokanson—Helena
Bill S. Chapman—Gardiner

POWERPLANT MECHANIC

William A. Brown—Bozeman
James G. Hokanson—Helena

PARACHUTE RIGGER

Stuart E. Putnam, Jr.—Missoula (Master)
Hamuel A. Gronning—Casper, Wyo. (Senior)
William P. Allred—Missoula (Master)
Gerald L. Lebsack—Spokane, Wash. (Senior)

RADIO REPAIRMAN

William C. Stewart—Missoula

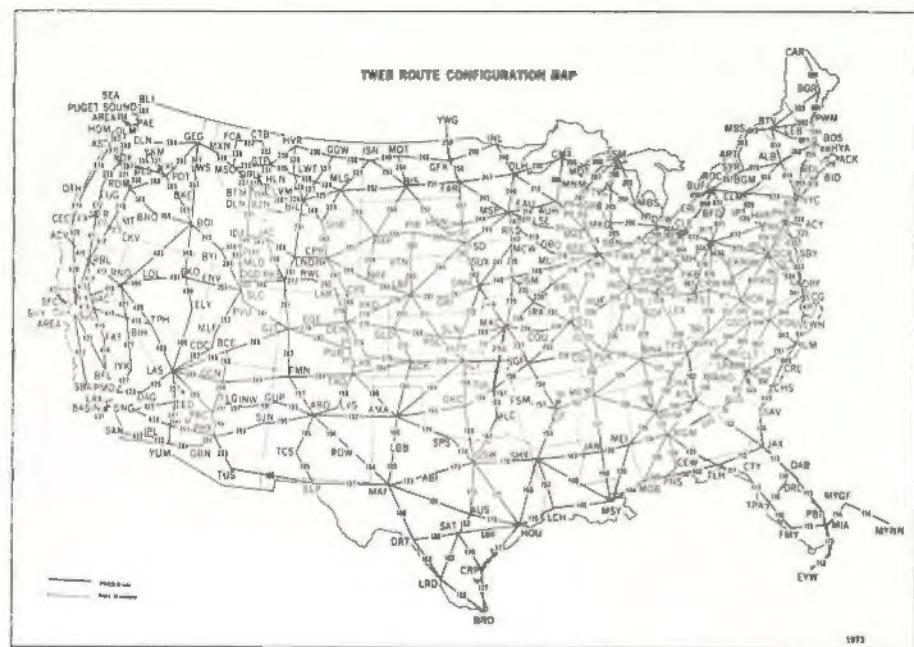
NEW TWEBS BEGAN BY NATIONAL WEATHER SERVICE

The Federal Aviation Administration and National Weather Service began a nationwide test of new Transcribed Weather Broadcasts (TWEBS) and In-Flight Advisories (AIRMETs and SIGMETs) on July 20, 1973. This is the first of several aviation forecast test innovations which will be initiated this year. The test will be carried out in the contiguous United States for a year. After that time the results will be evaluated and discussed with all interested parties before final implementation.

Transcribed Weather Broadcasts (TWEBS and PATWAS): The major changes in this program are: (1) New numbered TWEB routes for the entire contiguous United States, which will be available on Service A teletype request/reply (R/R) for the use of pilots and pilot weather briefers of the National Weather Service and the AAA Flight Service Stations, as well as providing the route portion of the TWEB broadcasts and PATWAS recordings; and (2) a series of cross-country routes (made up from the individual TWEB routes) which will also be available to pilots and briefers on R/R. The above diagrams show the TWEB route configuration for the United States and the cross-country TWEB routes. The number of TWEB and PATWAS locations has expanded in the past several years and more expansion of these aviation services is anticipated.

In-Flight Advisory (AIRMET/SIGMET) Changes: The new AIRMETs and/or SIGMETs will have a flight precaution (FLT PRCTN) statement in the first sentence (which includes location, type and timing of weather hazards). These will help the pilots as well as providing a flight precaution statement for the TWEB broadcasts. An example of a SIGMET with FLT PRCTN (underlined) follows:

SFO WS 022210
202210-210300Z
SIGMET ALPHA 1. FLT PRCTN. SVR



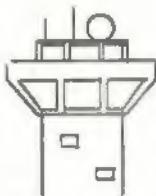
1974 REQUESTS FOR ADAP FUNDS

The Federal Aviation Administration has announced that it is accepting applications from public airport sponsors for Airport Development Aid Program (ADAP) funds for Fiscal Year 1974.

This year's program incorporates two major changes as a result of recently enacted legislation amending the Airport and Airway Development Act of 1970.

The legislation known as the Airport Development Acceleration Act of 1973 increased the annual ADAP authorization level from \$280 million to \$310 million. It also increased

the federal share of the jointly-funded ADAP projects.



TOWER

OPERATIONS

MAY 1973

	Total Operations	Instrument Operations
Billings	9,286	1,942
Great Falls	9,119	1,591
Missoula	9,429	598
Helena	3,871	504

JUNE 1973

	Total Operations	Instrument Operations
Billings	9,674	2,215
Great Falls	8,671	1,875
Missoula	7,957	771
Helena	4,077	557

GOLDEN SENTINAL TEAM IN MONT. SEPT. 14 & 15

The Golden Sentinel Team, a team of specialists for the Federal Aviation Administration, Rocky Mountain Region, will conduct a safety seminar in Great Falls, September 14 and 15, 1973.

The seminar will be held at the C. M. Russell High School, 228 17th Avenue, NW. Meeting times are 7-9 PM on Friday and 9-4 PM Saturday.

Seminar presentations will include: Aircraft accidents and causes; air-space; radio navigation; weather; mountain flying and survival; and the latest training films.

The seminar is sponsored by the Montana Division of Aeronautics.

MEMBER

NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS

PURPOSE:—“To foster aviation, as an industry, as a mode of transportation for persons and property and as an arm of the national defense; to join with the Federal Government and other groups in research, development, and advancement of aviation; to develop uniform laws and regulations; and to otherwise encourage co-operation and mutual aid among the several states.”

P. O. Box 1698
Helena, Montana 59601



July-August, 1973

Second-Class
Postage Paid at
Helena, Mont. 59601